No. 706,079. Patented Aug. 5, 1902.

F. O. MECHLIN.

# MEANS FOR CUTTING SADDLE SEAT BOTTOMS FOR CHAIRS.

(Application filed Aug. 30, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

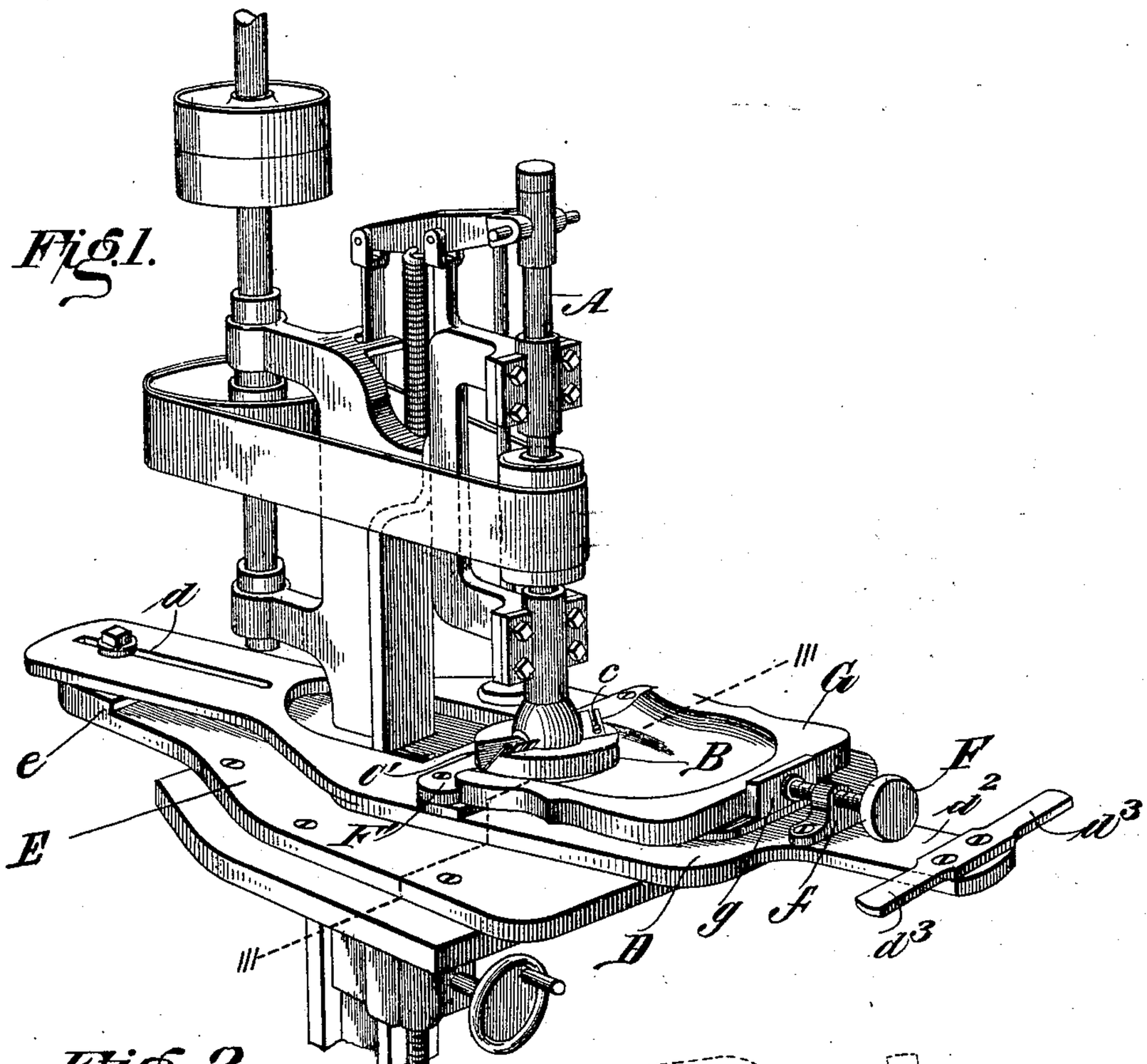


Fig. 2.

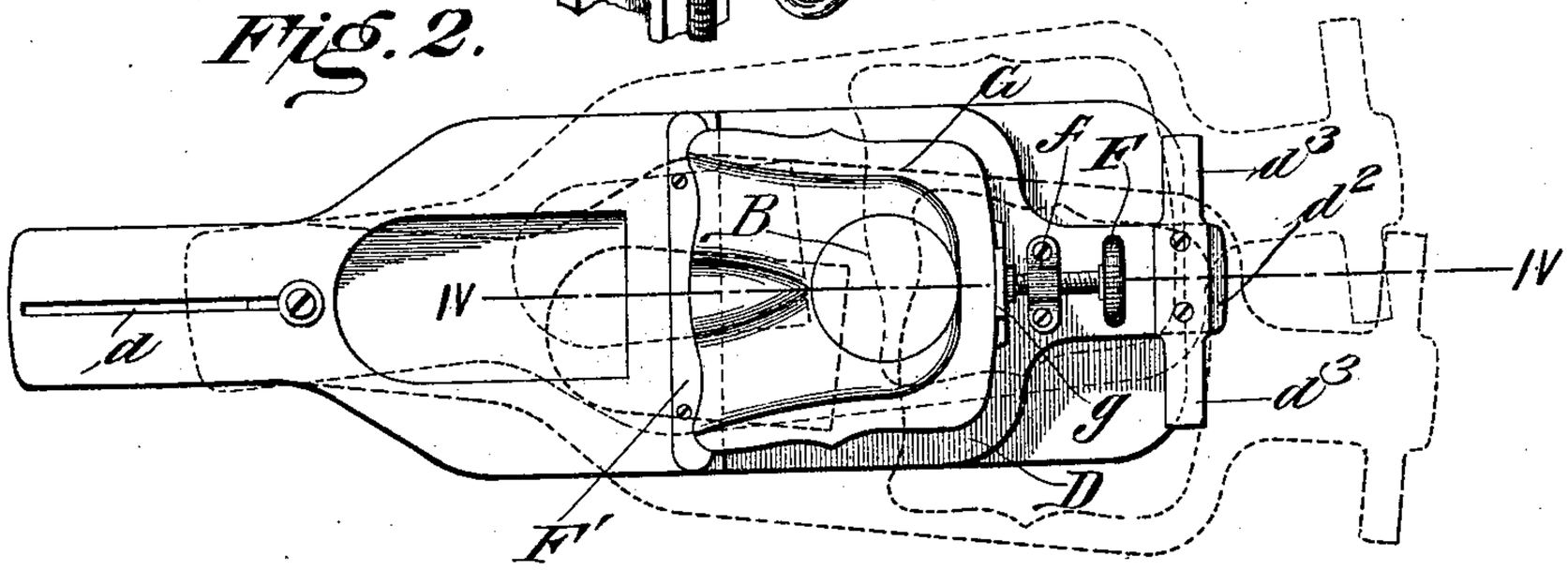


Fig. 3.

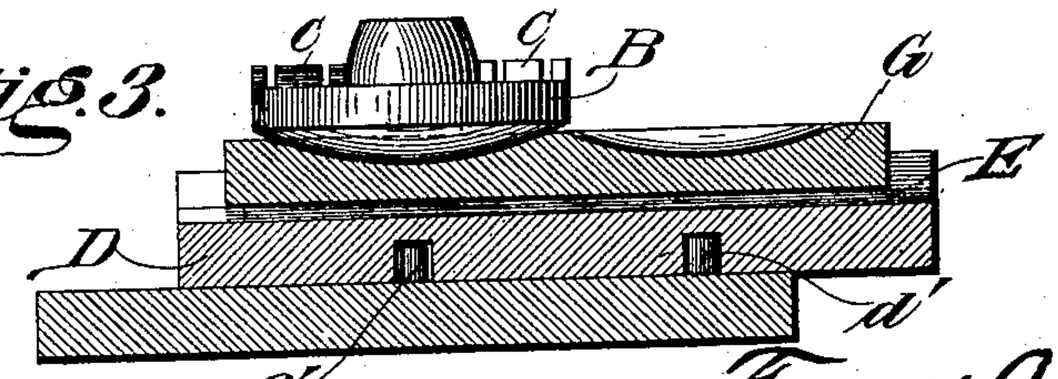


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Fig. 4.

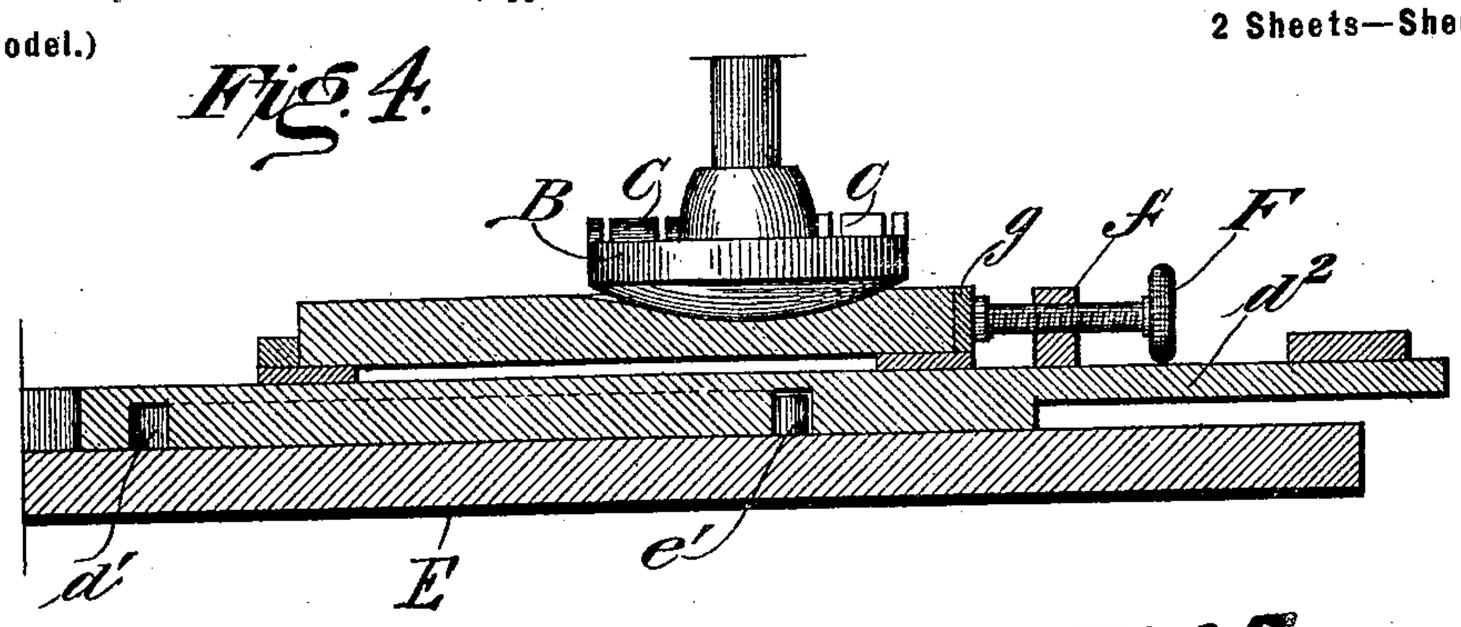
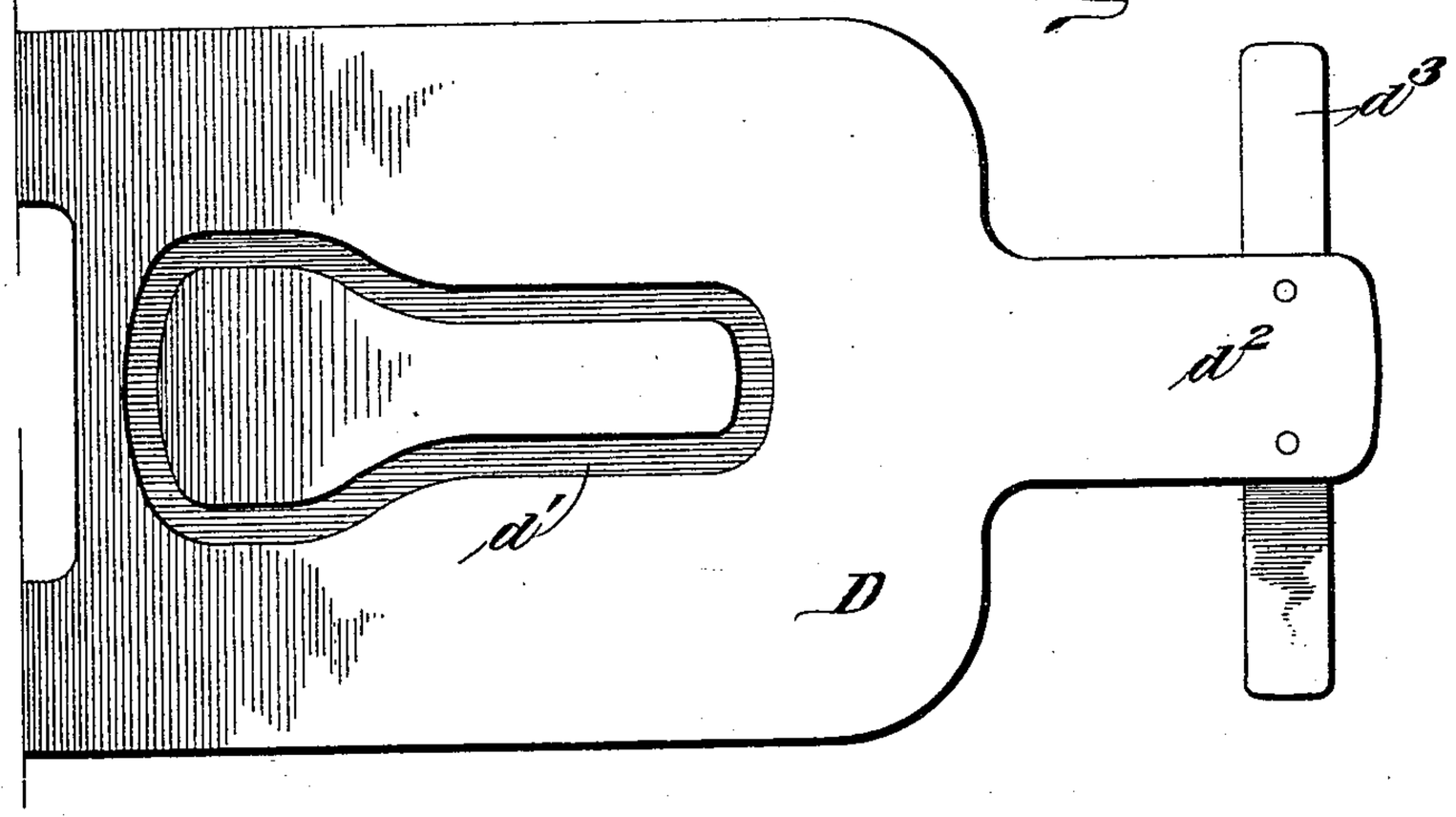



Fig. 5.

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# UNITED STATES PATENT OFFICE.

FRANCIS ORR MECHLIN, OF WASHINGTON COURT-HOUSE, OHIO.

## MEANS FOR CUTTING SADDLE-SEAT BOTTOMS FOR CHAIRS.

SPECIFICATION forming part of Letters Patent No. 706,079, dated August 5, 1902.

Application filed August 30, 1901. Serial No. 73,841. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS ORR MECHLIN, a citizen of the United States, residing at Washington Court-House, in the county of Fayette and State of Ohio, have invented certain new and useful Improvements in Means for Cutting Saddle-Seat Bottoms for Chairs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to devices for cutting out saddle-seat bottoms for chairs—that is, for cutting chair-bottoms in saddle-seat form—and also for "dishing" other articles.

The objects of this invention are to provide an efficient, inexpensive, and easily-manipulated work-supporting sliding table for cooperation with a cutter-head adapted to form a concave circular recess or depression in a chair-bottom or other article, whereby the operator may readily present the form or article to be cut to the cutter-head in such manner as to effect the desired dishing or "cupping" operation with ease and despatch and in a most desirable and satisfactory manner in forming saddle-seat bottoms for chairs and in cupping chair and stool seats and other articles.

The invention will first be hereinafter more fully described with reference to the accompanying drawings, which are to be taken as a part of this specification, and then pointed out in the claims at the end of the description.

In the drawings, Figure 1 represents a perspective view of an ordinary boring-machine mounted upon a suitable stand and showing my improved form-supporting sliding table and coöperating cutter-head operatively connected therewith. Fig. 2 is a plan view of the form-supporting sliding table, showing the latter in full lines in its foremost position with the cutter-head positioned on the rear portion of the form which is to be cut and also indicating in dotted lines the two positions of the table when moved backward and at the same time thrown toward the right and the left hand side of the machine to adapt the cutter-head to operate upon the sides of the form. Fig. 3 is a detail sectional view taken on the line III III of Fig. 1. Fig. 4 is a longitudinal sectional view of the sliding table and its guide and support, said section being taken on line IV IV of Fig. 2. Fig. 5 is an inverted or bottom plan view of the form-supporting sliding table.

The sliding table and attachments which I shall now proceed to describe as constituting one form of embodiment of my invention are adapted to be used with any ordinary boring-machine—such, for example, as shown in the accompanying drawings—with my improvements applied thereto, said machine being provided with the usual appliances for raising and lowering the table on which the work is supported to move the work toward and from the cutting-tool, so as to enable the latter to act thereon. Inasmuch as said boring-machine forms no part of my present invention, a specific description thereof herein is not deemed necessary. Said machine may be provided with any suitable means for securing the sliding table and its attachments thereto and with means for raising and lowering the table and mechanism for imparting rotary movement to the mandrel or boring-shaft, which latter is denoted by the letter A in the drawings and carries the cutter-head B, which takes the place of the usual boring-tool. Said cutter-head is preferably of the form shown in my pending application, Serial No. 89,218, filed January 10, 1902, as a division of this case and has a centrally-disposed boss or enlargement thereon for securing it to the lower end of its driving-shaft and is provided with one or more cutters C C, having curved cutting edges which extend from the center to the circumference or outer edge of said head, said knives being fitted and adjustably secured in slots or excavations C′ C′, having inclined walls or seats for the knives and extending transversely of the head, preferably in substantially the same horizontal plane and in opposite directions from the center. The knives may be adjusted as their cutting edges become worn and may be easily removed when desired for sharpening or for substituting a new knife for an old or broken one. Two knives are preferable, arranged as shown; but a greater or less number may be employed. The cutter-head is designed to cut a concave recess of the form shown in Fig. 3, and is especially useful in forming

saddle-seat bottoms for chairs and for cupping chair and stool seats or dishing other articles. For such purposes it is necessary that the work or form to be cut shall be presented to the cutter-head in such manner that the material will be operated upon in the desired manner for forming the seat, which I accomplish by providing a coöperating form-supporting sliding table D, which may be slidingly fitted upon the machine table or top, but preferably upon a supporting-plate and guide E, secured to the machine-table, said support and guide being secured in a fixed position by fastening-bolts or otherwise to the machine-table or attached to the machine-frame as a substitute for or in place of the usual machine-table. In the form shown the support and guide plate has somewhat the form of a lawn-tennis racket, with the wider portion thereof at the front and a raised or thickened portion *e* at the rear. On such support the sliding table D is fitted and has its rear end pivoted thereto by means of a bolt or stud extending up through a longitudinal slot *d* in the rear portion of the table. Said table-support E is also provided with a guide-pin *e'*, suitably located on the rear portion thereof to engage a guide-slot *d'* in the sliding table and guide the latter in its backward-and-forward and sidewise movements, said guide-slot *d'* being suitably formed in the bottom or under side of the sliding table. The form of the slot *d'* will determine the course the cutter-head must take when the sliding table is moved so as to effect the desired cut, the table being moved back and forth by hand and its movements being controlled by the guide slot and pin. The form of the guide-slot may be varied to meet different requirements in use. The form shown is especially designed for cutting chair-bottoms in saddle-seat form, which is accomplished by providing a slot which for the greater portion of its length has two parallel limbs which then diverge and again run parallel for a short distance and are united at their ends by a slightly-curved bend, as shown in Fig. 5. By this means when a form or blank to be cut is placed upon the table in position to be operated upon by the cutter-head, as indicated in full lines in Fig. 2, said form may be moved sidewise toward either the right or left and then forward, as indicated in dotted lines in Fig. 2, for the purpose of cutting the desired concavity or saddle-seat form, the table being guided in its movements by the pin *e'* working in the slot *d'*. When moved to either of the dotted-line positions, the table will then be brought back to the original full-line position in order to cut the other side. It will be understood, of course, that the guide-pin *e'* may be carried by the sliding table, while the guide-slots are formed in the supporting guide-plate E, and the machine-table may take the place of the latter in either case.

Any suitable clamping device for holding the work or form which is to be cut in proper position for presentation to the cutter-head may be provided, and the sliding table is conveniently provided with a rearward extension $d^2$, having a cross-bar $d^3$ thereon to serve as a handle to be grasped by the operator (standing beside the machine) for moving the table sidewise and forward and back, according to the movements permitted by the coacting guide slots and pins. The clamping device in the present instance consists of an adjustable screw F, suitably mounted in a fixed bearing-plate *f* on the table D and having one end arranged to bear against the form or blank G or other work supported on said table, or a wear-plate *g* may be interposed between the article to be cut and the end of the adjusting-screw, the pressure of the latter being opposed by a stop-piece F', suitably located and fixed upon the table at a proper distance from said screw.

I thus provide a simple and efficient device for the purposes stated which is so positioned with respect to the cutter-head as to afford a good leverage and adapt it to be easily manipulated for shifting the position of the work about the cutter, thus insuring certainty of action on such part of the form or article as may be desired for accomplishing the required configuration of the cavity that it is desired to cut.

The operation of the invention will be readily understood from the foregoing description when taken in connection with the accompanying drawings. The cutter-head having been properly fixed upon the vertical shaft or spindle A in the place usually occupied by the boring-tool, the cutter-shaft is started and caused to continually revolve in the usual manner, while the sliding table is moved to the position indicated in full lines in Fig. 2 to bring the work or blank to be cut into contact with the cutter, and thereby a concave recess or excavation is formed in the blank, and by manipulating the table by means of the handle $d^3$ it is moved gradually toward one side or the other and then backwardly to one of the dotted-line positions indicated in Fig. 2, thus forming a concavity which extends from the front of the blank at one side to the rear thereof, and thereupon the table may be moved across sidewise and then backward to the other dotted-line position shown in Fig. 2 while the cutter operates on the blank, or the table may be returned to the original full-line position shown in Fig. 2 and then moved to the other side and backward, as before, thus forming an excavation or concavity on that side of the blank, so as to make the excavation continuous around the blank from side to side thereof, leaving a convex ridge in the center, as shown in Figs. 1, 2, and 3 of the drawings.

As will be seen, the sliding table is positioned on its underlying base-plate or support so as to locate the cutter-head at an in-

termediate point between the ends of the table, one end having a pivotal connection at one side of the machine-standard with said base-plate or support and the other end being freely movable or adapted to swing sidewise within limits prescribed by the guide-slot and engaging stud or pin for controlling and limiting the movements of the table, so that an article or form lying thereon may be presented for the action of the cutter-head along lines conforming to the contour lines of the excavation or concavity to be cut.

It will be understood, of course, that while I preferably employ a cutter-head of the character hereinbefore mentioned I do not desire to limit the application of my present invention to such use, as it may be used with various kinds of cutter-heads and for various other purposes than those hereinbefore mentioned.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In combination with the support and guide-plate having substantially the form of a lawn-tennis racket, the superposed sliding table having a reduced longitudinally-slotted portion pivoted to the reduced portion of said guide-plate by a pivot-bolt passing through said slot, and having an approximately lawn-tennis-racket-shaped slot on its under side, a stud on said guide-plate working in said slot for controlling the forward-and-back and sidewise movements of the table, and a clamping device for holding the work in a fixed position in engagement with the cutter-head; substantially as described.

2. A work-supporting sliding table comprising a fixed member and a movable member having rearward extensions pivotally connected together at one side of the machine-standard, the movable member being longitudinally slotted to receive the pivot-bolt, a substantially lawn-tennis-racket-shaped guide slot or groove in the surface of one member and a projection on the confronting surface of the other member working in said slot or groove, together with means on the reverse side of the movable or superposed member for holding the work in a fixed position for the action of the cutter-head; substantially as described.

3. In a machine of the character described, a work-supporting longitudinally-slidable and sidewise-movable table comprising a base-plate having an extension rearward of the machine-standard, a movable plate or table proper having a rearward extension pivotally connected with the extension of said base-plate and longitudinally slotted to receive the pivot-bolt, together with means for limiting and controlling the forward-and-back and sidewise movements of the table, consisting of a slot or groove on one of said plates engaged by a stud or projection on the other, and means carried by the movable member for holding the form or work to be cut in a fixed position thereon; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANCIS ORR MECHLIN.

Witnesses:
F. M. BATEMAN,
J. F. ADAMS.